# MANUFACTURING EXTENSION PARTNERSHIP Success Stories from the Field

## Micron Manufacturing Co.

Michigan Manufacturing Technology Center

Micron Manufacturing Lowers Costs, Raises Opportunities with Set-Up Reduction

#### **Client Profile:**

Micron Manufacturing Co. produces small metal components for the automotive, hydraulic, gas and oil exploration, short-track racing and mass transit industries. The company employs 35 people at its facility in Grand Rapids, Michigan.

### Situation:

Micron's screw machines convert 12-foot metal bars into large quantities of metal parts used in the inner workings of everything from automotive speedometers to wheelchair lifts. Once running, a screw machine is one of the most efficient methods for machining high volume product but usually requires highly complex, lengthy set ups before a production cycle can begin. Facing shortages in skilled machine operators, Micron's Plant Manager, Dan Vermeesch, was looking for ways to increase the efficiency of his highest-producing machines in hopes of reducing the need for additional staff and equipment. Lean manufacturing was not a new concept for Vermeesch, but when it came to set-up reduction, a partnership with the Michigan Manufacturing Technology Center (MMTC), a NIST MEP network affiliate, brought new ideas, and new profits, to the table.

#### Solution:

Micron was a long-time customer of MMTC's West Michigan Regional Office, The Right Place, Inc., and had worked with MMTC's senior facilitator Rick Fleming on a number of projects. "We had done some work on our own on 5S, workflow and other basic lean tools, but what we were looking for was a specific, in-house, set-up reduction program that we could replicate in any of our other four departments," said Vermeesch. "My goal was to cut the set-up time by 50 percent for a group of machines that run 70 to 75 percent of the product for that department." MMTC worked with Micron to document the set-up reduction process the team followed during the project. That process included videotaping set ups; identifying areas of waste; creating new, more-efficient, standard processes; and testing those ideas in practice. As a result, Micron radically changed its work process, such as working with its tooling suppliers to develop a standard design for the tools used in the screw machines. The company also began pre-setting the tools for the next job, outside the machine, while the machine is completing its current job. As a result of the project, Micron now also groups jobs into part families, so that parts made of the same metal are crafted on the same machine, eliminating the need to clean minute metal shavings between runs. "Eliminating the need to clean the machines between jobs not only has significantly reduced our set-ups, it has improved our quality," said Vermeesch. Standardizing the set-up process was also a significant change. "We identified 52 steps needed for each set up, and among the four operators in the group, each had their own way of working through those steps, creating countless variations to the process," he said, noting that changing the order of the steps increased the set up time by 50 to 100 percent. Other improvements included the installation of easily adjustable stock stops, creating pegged tool boards for each machine that contained only the tools needed for that machine during set up, and standardizing the gauges used for set ups.



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#### Results:

- \* Realized \$37,000 in annual savings.
- \* Reduced set-up time by 73 percent.
- \* Eliminated 624 hours from set-up process.
- \* Anticipated reduction of screw machines from 20 machines to 8.

### **Testimonial:**

"Increasing the efficiency of these key machines, which already carry such a large percentage of our business, allows us to reduce the overhead we have in some of these older machines without diminishing our capacity, and we can invest those savings into new technologies that will improve our quality, allow us to go after projects that require higher tolerances, and pursue new markets. That's a huge return on our initial \$5,000 investment and a tremendous value for us."

Dan Vermeesch, Plant Manager

